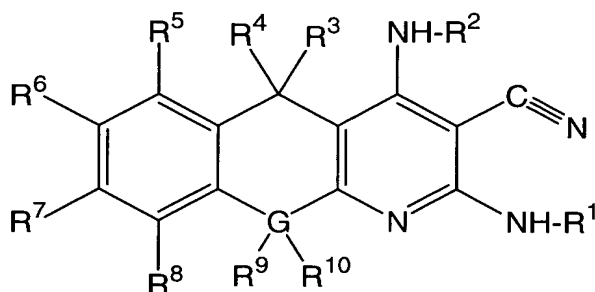


**WHAT IS CLAIMED IS:**

1. An aminocyanopyridine compound having the structure:



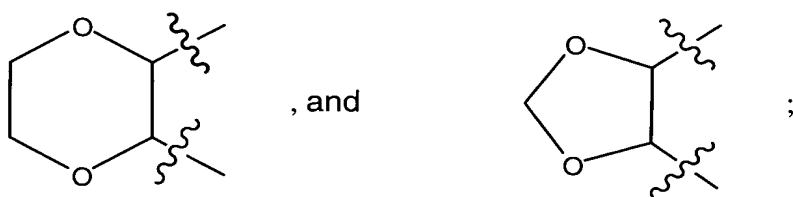
wherein:

- 5 each of R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup>, and R<sup>8</sup> is independently selected from the group consisting of  
hydrogen, hydroxy, amino, halo, nitro,  
branched or unbranched C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, C<sub>2</sub>-C<sub>6</sub> alkynyl,  
C<sub>1</sub>-C<sub>6</sub> alkoxy, hydroxy C<sub>1</sub>-C<sub>6</sub> alkyl, hydroxy C<sub>1</sub>-C<sub>6</sub> alkoxy, C<sub>1</sub>-C<sub>6</sub> alkoxy C<sub>1</sub>-  
10 C<sub>6</sub> alkoxy, C<sub>1</sub>-C<sub>6</sub> alkoxy C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>1</sub>-C<sub>6</sub> alkenoxy,  
branched or unbranched amino C<sub>1</sub>-C<sub>6</sub> alkyl, diamino C<sub>2</sub>-C<sub>6</sub> alkyl, C<sub>1</sub>-  
C<sub>6</sub> alkylamino C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>1</sub>-C<sub>6</sub> alkylamino, di-(C<sub>1</sub>-C<sub>6</sub> alkyl)amino, C<sub>1</sub>-C<sub>4</sub>  
alkoxyarylamino, C<sub>1</sub>-C<sub>4</sub> alkoxyalkylamino, amino C<sub>1</sub>-C<sub>6</sub> alkoxy, di-(C<sub>1</sub>-C<sub>4</sub>  
alkylamino, C<sub>2</sub>-C<sub>6</sub> alkoxy, di-(C<sub>1</sub>-C<sub>6</sub> alkyl)amino C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>1</sub>-C<sub>6</sub>  
15 alkylamino C<sub>1</sub>-C<sub>6</sub> alkoxy, halo C<sub>1</sub>-C<sub>6</sub> alkoxy, dihalo C<sub>1</sub>-C<sub>6</sub> alkoxy, trihalo C<sub>1</sub>-  
C<sub>6</sub> alkoxy, cyano C<sub>1</sub>-C<sub>6</sub> alkyl, dicyano C<sub>1</sub>-C<sub>6</sub> alkyl, cyano C<sub>1</sub>-C<sub>6</sub> alkoxy,  
dicyano C<sub>1</sub>-C<sub>6</sub> alkoxy, carbamyl C<sub>1</sub>-C<sub>4</sub> alkoxy, heterocyclyl C<sub>1</sub>-C<sub>4</sub> alkoxy,  
heteroaryl C<sub>1</sub>-C<sub>4</sub> alkoxy, sulfo, sulfamyl, C<sub>1</sub>-C<sub>4</sub> alkylaminosulfonyl, hydroxy  
C<sub>1</sub>-C<sub>4</sub> alkylaminosulfonyl, di-(C<sub>1</sub>-C<sub>4</sub> alkyl)aminosulfonyl, C<sub>1</sub>-C<sub>4</sub> alkylthio, C<sub>1</sub>-  
20 C<sub>4</sub> alkylsulfonyl, C<sub>1</sub>-C<sub>4</sub> alkylsulfinyl,  
aryl, aryl C<sub>1</sub>-C<sub>6</sub> alkyl, heterocyclyl C<sub>1</sub>-C<sub>6</sub> alkyl, heteroaryl C<sub>1</sub>-C<sub>6</sub> alkyl,  
heterocyclyl C<sub>1</sub>-C<sub>6</sub> alkoxy, heteroaryl C<sub>1</sub>-C<sub>6</sub> alkoxy, aryl C<sub>1</sub>-C<sub>6</sub> alkoxy,  
where the aryl ring can be substituted or unsubstituted, and, if substituted,  
the substituent group is selected from one or more of the group consisting  
25 of C<sub>1</sub>-C<sub>6</sub> alkyl, halo, amino, and C<sub>1</sub>-C<sub>6</sub> alkoxy,

substituted or unsubstituted C<sub>3</sub>-C<sub>6</sub> cyclyl, C<sub>3</sub>-C<sub>6</sub> heterocyclyl, and, if substituted, the substituent group is selected from one or more of the group consisting of C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>1</sub>-C<sub>6</sub> alkoxy, halo, amino, and where the C<sub>3</sub>-C<sub>6</sub> heterocyclyl ring contains O, S, or N,

5            branched or unbranched C<sub>1</sub>-C<sub>6</sub> alkoxycarbonyl C<sub>1</sub>-C<sub>6</sub> alkoxy, and carboxy, carboxy C<sub>1</sub>-C<sub>6</sub> alkoxy, carboxy C<sub>1</sub>-C<sub>6</sub> alkyl, hydroxy C<sub>1</sub>-C<sub>4</sub> alkoxycarbonyl, C<sub>1</sub>-C<sub>4</sub> alkoxycarbonyl,

where R<sup>6</sup> and R<sup>7</sup> are such that they optionally join to form a ring system of the type selected from



10

G is selected from the group consisting of oxygen, sulfur, and nitrogen;

when G is oxygen, R<sup>9</sup> and R<sup>10</sup> are absent;

when G is sulfur, each of R<sup>9</sup> and R<sup>10</sup> is optionally absent, or is oxo;

15            when G is nitrogen, R<sup>4</sup> is hydrogen, R<sup>9</sup> is absent, and R<sup>10</sup> is C<sub>1</sub>-C<sub>4</sub>-alkyl.

2.        The aminocyanopyridine having the structure shown in claim 1, where:

20            R<sup>1</sup> is selected from the group consisting of hydrogen, branched or unbranched alkyl, alkenyl, alkynyl, alkoxy, alkylaryl, arylalkyl, carboxy, carboxyalkyl, hydroxyalkyl, alkylcarboxy, aryl, amino, aminoalkyl, alkylamino, halo, alkylaminoalkyl, alkoxy, alkoxyalkyl, monocyclyl, bicycyl, polycyclyl, and heterocyclyl;

25            R<sup>2</sup> is selected from the group consisting of hydrogen, alkyl, alkenyl, alkynyl, alkoxy, hydroxyalkyl, alkylaryl, arylalkyl, alkoxyaryl, aminoalkyl, alkylaminoalkyl, arylaminoalkyl, alkoxyalkyl, alkylcarboxy, and carboxyalkyl;

$R^3$  is selected from the group consisting of hydrogen, dicyanoalkyl, and substituted or unsubstituted heterocyclyl and cyclyl, where substituents, if any, comprise halo moieties;

5  $R^4$  is selected from the group consisting of hydrogen, dicyanoalkyl, and substituted or unsubstituted heterocyclyl and cyclyl, where substituents, if any, comprise halo moieties;

$R^5$  is selected from the group consisting of hydrogen, alkoxy, halo, alkyl, alkenyl, alkyl, arylalkyl, and alkylaryl;

10  $R^6$  is selected from the group consisting of hydrogen, hydroxy, alkoxy, alkyl, alkenyl, alkynyl, amino, alkylamino, arylamino, alkylaminoalkyl, carboxy, aminoalkoxy, halo, alkylcarboxyalkyl, alkylamino, aminoalkyl, nitro, aryl, arylalkyl, alkylaryl, and arylamino;

15  $R^7$  is selected from the group consisting of hydrogen, hydroxy, alkoxy, alkenoxy, hydroxyalkoxy, alkoxyalkoxy, aminoalkoxy, heterocyclylalkyl, heterocyclylalkoxy, carboxyalkoxy, alkylaminoalkoxy, and alkylcarboxyalkoxy;

where the  $R^6$  and  $R^7$  groups optionally join to form a six membered heterocyclic ring;

20  $R^8$  is selected from the group consisting of hydrogen, hydroxy, halo, nitro, amino, alkyl, alkoxy, heterocyclylalkoxy, carboxyalkoxy, pyrrolidylethoxy, carboxymethoxy, hydroxyalkoxy, aminoalkoxy, alkylcarboxy, alkylaminoalkyl, carboxy, and heterocyclylalkyl; and

G is selected from the group consisting of oxygen, sulfur, and nitrogen;

25 when G is oxygen,  $R^9$  and  $R^{10}$  are absent;

when G is sulfur, each of  $R^9$  and  $R^{10}$  is optionally absent, or is oxo;

when G is nitrogen,  $R^9$  is absent, and  $R^{10}$  is  $C_1$ - $C_4$ -alkyl.

3. The aminocyanopyridine having the structure shown in claim 1, where:

30  $R^1$  is selected from the group consisting of hydrogen, ethyl, dimethylaminoethyl, butyl, propyl, methoxyethyl, tetramethylaminoethyl, and carboxymethyl;

$R^2$  is selected from the group consisting of hydrogen, hydroxyethyl, propyl, ethyl, methyl, 4-methoxyphenyl, ethoxyethyl, aminoethyl, phenylmethyl, dimethylaminoethyl, phthalaminoethyl, butyl, methoxyethyl, tetramethylaminoethyl, and carboxymethyl;

5             $R^3$  is selected from the group consisting of hydrogen, dicyanomethyl, 2-fluorophenyl, phenyl, and 3-fluorophenyl.

$R^4$  is selected from the group consisting of hydrogen, dicyanomethyl, 2-fluorophenyl, phenyl, and 3-fluorophenyl;

10            $R^5$  is selected from the group consisting of hydrogen, hydroxy, methoxy, bromo, and 2-pyridomethyl;

$R^6$  is selected from the group consisting of hydrogen, hydroxy, methoxy, amino, carboxy, diaminoethoxy, bromo, propoxy, isobutylcarboxymethoxy, dimethylamino, nitro, phenyl, chloro, pyridylmethyl, and fluoro;

15            $R^7$  is selected from the group consisting of hydrogen, hydroxy, methoxy, hydroxyethoxy, ethoxyethoxy, ethoxy, aminoethoxy, morpholinoethoxy, carboxymethoxy, *N*-pyrrolidylethoxy, dimethylaminoethoxy, pyridylmethyl, 2-propenoxy, and isobutylcarboxymethoxy,

20           where the  $R^6$  and  $R^7$  groups optionally join to form a six membered heterocyclic ring;

$R^8$  is selected from the group consisting of hydrogen, hydroxy, fluoro, methoxy, nitro, amino, pyrrolidylethoxy, carboxymethoxy, methyl, hydroxyethoxy, aminoethoxy, 4-pyridylmethoxy, isobutyl, ethylcarboxy, 25           dimethylaminoethoxy, carboxy, bromo, and pyridylmethyl; and

$G$  is selected from the group consisting of oxygen, sulfur, and nitrogen;

when  $G$  is oxygen,  $R^9$  and  $R^{10}$  are absent;

when  $G$  is sulfur, each of  $R^9$  and  $R^{10}$  is optionally absent, or is oxo;

30           when  $G$  is nitrogen,  $R^9$  is absent, and  $R^{10}$  is  $-CH_3$ .

4.        The aminocyanopyridine having the structure shown in claim 1, where:

R<sup>1</sup> is selected from the group consisting of hydrogen, and C<sub>1</sub>-C<sub>2</sub> alkyl;

R<sup>2</sup> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>3</sub> alkyl, hydroxy C<sub>1</sub>-C<sub>2</sub> alkyl, C<sub>1</sub>-C<sub>2</sub> alkoxyphenyl, C<sub>1</sub>-C<sub>2</sub> alkoxy C<sub>1</sub>-C<sub>2</sub> alkyl, amino C<sub>1</sub>-C<sub>2</sub> alkyl, phenyl C<sub>1</sub>-C<sub>2</sub> alkyl, and di C<sub>1</sub>-C<sub>2</sub> alkylamino C<sub>1</sub>-C<sub>2</sub> alkyl;

R<sup>3</sup> and R<sup>4</sup> are each independently selected from the group consisting of hydrogen, dicyano C<sub>1</sub>-C<sub>2</sub> alkyl, and halophenyl;

R<sup>5</sup> is selected from the group consisting of hydrogen, and hydroxy;

R<sup>6</sup> is selected from the group consisting of hydrogen, hydroxy, C<sub>1</sub> - C<sub>3</sub> alkoxy, amino, nitro, carboxy, diamino C<sub>1</sub> - C<sub>2</sub> alkoxy, halo, propenoxy, iso C<sub>3</sub> - C<sub>4</sub> alkylcarboxy C<sub>1</sub> - C<sub>2</sub> alkoxy, di C<sub>1</sub> - C<sub>2</sub> alkylamino, and phenyl;

R<sup>7</sup> is selected from the group consisting of hydrogen, hydroxy, C<sub>1</sub> - C<sub>3</sub> alkoxy, hydroxy C<sub>1</sub> - C<sub>2</sub> alkoxy, C<sub>1</sub> - C<sub>2</sub> alkoxy C<sub>1</sub> - C<sub>2</sub> alkoxy, amino C<sub>1</sub> - C<sub>2</sub> alkoxy, morpholino C<sub>1</sub> - C<sub>2</sub> alkoxy, carboxyl C<sub>1</sub> - C<sub>2</sub> alkoxy, pyrrolidyl C<sub>1</sub> - C<sub>2</sub> alkoxy, di C<sub>1</sub> - C<sub>2</sub> alkylamino C<sub>1</sub> - C<sub>2</sub> alkoxy, pyrrolidyl C<sub>1</sub> - C<sub>2</sub> alkyl, iso C<sub>3</sub> - C<sub>4</sub> alkylcarboxy C<sub>1</sub> - C<sub>2</sub> alkoxy, and 2-propenoxy,

where the R<sup>6</sup> and R<sup>7</sup> groups optionally join to form a six membered heterocyclic ring;

R<sup>8</sup> is selected from the group consisting of hydrogen, hydroxy, halo, C<sub>1</sub>-C<sub>2</sub> alkyl, C<sub>1</sub>-C<sub>2</sub> alkoxy, nitro, amino, pyrrolidyl C<sub>1</sub>-C<sub>2</sub> alkoxy, carboxy C<sub>1</sub>-C<sub>2</sub> alkoxy, hydroxy C<sub>1</sub>-C<sub>2</sub> alkoxy, and amino C<sub>1</sub>-C<sub>2</sub> alkoxy; and

G is selected from the group consisting of oxygen and sulfur;

when G is sulfur, each of R<sup>9</sup> and R<sup>10</sup> is optionally absent, or is oxo;

when G is oxygen, R<sup>9</sup> and R<sup>10</sup> are absent.

5. The aminocyanopyridine having the structure shown in claim 1, where:

R<sup>1</sup> is hydrogen;

R<sup>2</sup> is selected from the group consisting of hydrogen, C<sub>1</sub> - C<sub>3</sub> alkyl, hydroxy C<sub>1</sub> - C<sub>2</sub> alkyl, C<sub>1</sub> - C<sub>2</sub> alkoxyphenyl, C<sub>1</sub> - C<sub>2</sub> alkoxy C<sub>1</sub> - C<sub>2</sub> alkyl, amino C<sub>1</sub> - C<sub>2</sub> alkyl, phenyl C<sub>1</sub> - C<sub>2</sub> alkyl, and di C<sub>1</sub> - C<sub>2</sub> alkylamino C<sub>1</sub> - C<sub>2</sub> alkyl;

$R^3$  and  $R^4$  are each independently selected from the group consisting of hydrogen, and dicyano  $C_1 - C_2$  alkyl.

$R^5$  is selected from the group consisting of hydrogen, and hydroxy;

5  $R^6$  is selected from the group consisting of hydrogen, hydroxy,  $C_1 - C_2$  alkoxy, amino, carboxy, nitro, diamino  $C_1 - C_2$  alkoxy, halo, 2-propenoxy, iso  $C_3 - C_4$  alkylcarboxy  $C_1 - C_2$  alkoxy, di  $C_1 - C_2$  alkylamino, and phenyl;

10  $R^7$  is selected from the group consisting of hydrogen, hydroxy,  $C_1 - C_2$  alkoxy, hydroxy  $C_1 - C_2$  alkoxy,  $C_1 - C_2$  alkoxy  $C_1 - C_2$  alkoxy, amino  $C_1 - C_2$  alkoxy, morpholino  $C_1 - C_2$  alkoxy, carboxyl  $C_1 - C_2$  alkoxy, pyrrolidyl  $C_1 - C_2$  alkoxy, di  $C_1 - C_2$  alkylamino  $C_1 - C_2$  alkoxy, pyrrolidyl  $C_1 - C_2$  alkyl, iso  $C_3 - C_4$  alkylcarboxy  $C_1 - C_2$  alkoxy, and 2-propenoxy;

wherein the  $R^6$  and  $R^7$  groups optionally join to form a six membered heterocyclic ring;

15  $R^8$  is selected from the group consisting of hydrogen, hydroxy, halo,  $C_1 - C_2$  alkoxy, nitro, amino, pyrrolidyl  $C_1 - C_2$  alkoxy, and carboxy  $C_1 - C_2$  alkoxy; and

G is selected from the group consisting of oxygen and sulfur;

when G is sulfur, each of  $R^9$  and  $R^{10}$  is optionally absent, or is oxo;

when G is oxygen,  $R^9$  and  $R^{10}$  are absent.

20 6. The aminocyanopyridine having the structure shown in claim 1, where:

$R^1$  is hydrogen;

25  $R^2$  is selected from the group consisting of hydrogen,  $C_1 - C_3$  alkyl, hydroxy  $C_1 - C_2$  alkyl,  $C_1 - C_2$  alkoxyphenyl,  $C_1 - C_2$  alkoxy  $C_1 - C_2$  alkyl, amino  $C_1 - C_2$  alkyl, and phenyl  $C_1 - C_2$  alkyl;

$R^3$  and  $R^4$  are each independently selected from the group consisting of hydrogen, and dicyano  $C_1 - C_2$  alkyl.

$R^5$  is selected from the group consisting of hydrogen, and hydroxy;

30  $R^6$  is selected from the group consisting of hydrogen, hydroxy,  $C_1 - C_2$  alkoxy, amino, carboxy, diamino  $C_1 - C_2$  alkoxy, halo, 2-propenoxy, iso  $C_3 - C_4$  alkylcarboxy  $C_1 - C_2$  alkoxy, and di  $C_1 - C_2$  alkylamino;

$R^7$  is selected from the group consisting of hydrogen, hydroxy, C<sub>1</sub>-C<sub>2</sub> alkoxy, hydroxy C<sub>1</sub>-C<sub>2</sub> alkoxy, C<sub>1</sub>-C<sub>2</sub> alkoxy C<sub>1</sub>-C<sub>2</sub> alkoxy, amino C<sub>1</sub>-C<sub>2</sub> alkoxy, morpholino C<sub>1</sub>-C<sub>2</sub> alkoxy, carboxyl C<sub>1</sub>-C<sub>2</sub> alkoxy, pyrrolidyl C<sub>1</sub>-C<sub>2</sub> alkoxy, di C<sub>1</sub>-C<sub>2</sub> alkylamino C<sub>1</sub>-C<sub>2</sub> alkoxy, pyrrolidyl C<sub>1</sub>-C<sub>2</sub> alkyl, iso C<sub>3</sub>-C<sub>4</sub> alkylcarboxy C<sub>1</sub>-C<sub>2</sub> alkoxy, and 2-propenoxy,

where the  $R^6$  and  $R^7$  groups optionally join to form a six membered heterocyclic ring;

$R^8$  is selected from the group consisting of hydrogen, hydroxy, halo, C<sub>1</sub>-C<sub>2</sub> alkoxy, nitro, amino, and pyrrolidyl C<sub>1</sub>-C<sub>2</sub> alkoxy; and

G is selected from the group consisting of oxygen and sulfur;  
when G is sulfur, each of  $R^9$  and  $R^{10}$  is optionally absent, or is oxo;  
when G is oxygen,  $R^9$  and  $R^{10}$  are absent.

7. The aminocyanopyridine having the structure shown in claim 1, where:

$R^1$  is hydrogen;

$R^2$  is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>3</sub> alkyl, hydroxy C<sub>1</sub>-C<sub>2</sub> alkyl, C<sub>1</sub>-C<sub>2</sub> alkoxyphenyl, C<sub>1</sub>-C<sub>2</sub> alkoxy C<sub>1</sub>-C<sub>2</sub> alkyl, and amino C<sub>1</sub>-C<sub>2</sub> alkyl;

$R^3$  and  $R^4$  are each independently selected from the group consisting of hydrogen, and dicyanoethyl;

$R^5$  is selected from the group consisting of hydrogen, and hydroxy;

$R^6$  is selected from the group consisting of hydrogen, hydroxy, C<sub>1</sub>-C<sub>2</sub> alkoxy, amino, carboxy, diamino C<sub>1</sub>-C<sub>2</sub> alkoxy, halo, 2-propenoxy, iso C<sub>3</sub>-C<sub>4</sub> alkylcarboxy C<sub>1</sub>-C<sub>2</sub> alkoxy, and di C<sub>1</sub>-C<sub>2</sub> alkylamino;

$R^7$  is selected from the group consisting of hydrogen, hydroxy, C<sub>1</sub>-C<sub>2</sub> alkoxy, hydroxy C<sub>1</sub>-C<sub>2</sub> alkoxy, C<sub>1</sub>-C<sub>2</sub> alkoxy C<sub>1</sub>-C<sub>2</sub> alkoxy, amino C<sub>1</sub>-C<sub>2</sub> alkoxy, morpholino C<sub>1</sub>-C<sub>2</sub> alkoxy, carboxyl C<sub>1</sub>-C<sub>2</sub> alkoxy, pyrrolidyl C<sub>1</sub>-C<sub>2</sub> alkoxy, di C<sub>1</sub>-C<sub>2</sub> alkylamino C<sub>1</sub>-C<sub>2</sub> alkoxy, pyrrolidyl C<sub>1</sub>-C<sub>2</sub> alkyl, iso C<sub>3</sub>-C<sub>4</sub> alkylcarboxy C<sub>1</sub>-C<sub>2</sub> alkoxy, and 2-propenoxy,

where the  $R^6$  and  $R^7$  groups optionally join to form a six membered heterocyclic ring;

R<sup>8</sup> is selected from the group consisting of hydrogen, hydroxy, halo, methoxy, nitro, and amino; and

G is selected from the group consisting of oxygen and sulfur;  
when G is sulfur, each of R<sup>9</sup> and R<sup>10</sup> is optionally absent, or is oxo;  
when G is oxygen, R<sup>9</sup> and R<sup>10</sup> are absent.

5

8. An aminocyanopyridine compound that is selected from the group consisting of:

2,4-diamino-7,8-dihydroxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,

2,4-diamino-8-hydroxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,

10

2-amino-7,8-dihydroxy-4-[(2-hydroxyethyl)amino]-5H-chromeno[2,3-b]pyridine-3-carbonitrile,

2,4-diamino-7,8-dimethoxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,

2-amino-7,8-dihydroxy-4-(propylamino)-5H-chromeno[2,3-b]pyridine-3-carbonitrile,

15

2-amino-4-(ethylamino)-7,8-dihydroxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,

2,4-diamino-9-hydroxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,

2,4-diamino-9-fluoro-5H-chromeno[2,3-b]pyridine-3-carbonitrile,

2,4-diamino-7-hydroxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,

20

2,4-diamino-8-(2-hydroxyethoxy)-5H-chromeno[2,3-b]pyridine-3-carbonitrile,

8,10-diamino-2,3-dihydro-11H-[1,4]dioxino[2',3':6,7]chromeno[2,3-b]pyridine-9-carbonitrile,

2,4,7-triamino-5H-chromeno[2,3-b]pyridine-3-carbonitrile

25

2,4-diamino-5H-chromeno[2,3-b]pyridine-3-carbonitrile,

2,4-diamino-8-(2-ethoxyethoxy)-7-hydroxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,

2,4-diamino-9-hydroxy-8-methoxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,

30

2,4-diamino-6,8-dihydroxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,

2,4-diamino-8-ethoxy-7-hydroxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,



- 2,4-diamino-8-(2-ethoxyethoxy)-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-8-(2-aminoethoxy)-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-3-cyano-5H-chromeno[2,3-b]pyridine-7-carboxylic acid,  
2,4-diamino-8,9-dihydroxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
5 2,4-diamino-8-(2-morpholin-4-ylethoxy)-5H-chromeno[2,3-b]pyridine-3-  
carbonitrile,  
[(2,4-diamino-3-cyano-5H-chromeno[2,3-b]pyridin-8-yl)oxy]acetic acid,  
2,4-diamino-9-methoxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-8-(2-pyrrolidin-1-ylethoxy)-5H-chromeno[2,3-b]pyridine-3-  
10 carbonitrile,  
2-amino-7,8-dimethoxy-4-(methylamino)-5H-chromeno[2,3-b]pyridine-3-  
carbonitrile,  
2,4-diamino-8-methoxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-8-[2-(dimethylamino)ethoxy]-5H-chromeno[2,3-b]pyridine-3-  
15 carbonitrile,  
2,4,7-triamino-9-methoxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2(2,4-diamino-3-cyano-8-methoxy-5H-chromeno[2,3-b]pyridin-5-  
yl)malononitrile,  
2,4-diamino-7,8-di[2-(amino)ethoxy]-5H-chromeno[2,3-b]pyridine-3-  
20 carbonitrile,  
2,4-diamino-9-nitro-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2-amino-7,8-dimethoxy-4-[(4-methoxyphenyl)amino]-5H-chromeno[2,3-  
b]pyridine-3-carbonitrile,  
2,4-diamino-8-methoxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
25 2(2,4-diamino-3-cyano-7-hydroxy-5H-chromeno[2,3-b]pyridin-5-  
yl)malononitrile,  
2(2,4-diamino-3-cyano-7-bromo-5H-chromeno[2,3-b]pyridin-5-  
yl)malononitrile,  
2-amino-8-ethoxy-4-(ethylamino)-5H-chromeno[2,3-b]pyridine-3-  
30 carbonitrile,  
2,4,9-triamino-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4,7-triamino-5H-thiochromeno[2,3-b]pyridine-3-carbonitrile,

- 2-amino-7,8-dimethoxy-4-[(4-methoxyphenyl)amino]-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2(2,4-diamino-3-cyano-7-methoxy-5H-chromeno[2,3-b]pyridin-5-yl)malononitrile,
- 5 2,4-diamino-9-hydroxy-8-(piperidin-1-ylmethyl)-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
7,8-bis(allyloxy)-2,4-diamino-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2-amino-8-(2-ethoxyethoxy)-4-[(2-ethoxyethyl)amino]-5H-chromeno[2,3-b]pyridine-3-carbonitrile,
- 10 tert-butyl {[2,4-diamino-7-(2-tert-butoxy-2-oxoethoxy)-3-cyano-5H-chromeno[2,3-b]pyridin-8-yl]oxy}acetate,  
2-amino-4-[(2-aminoethyl)amino]-7,8-dimethoxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2(2,4-diamino-3-cyano-8-hydroxy-5H-chromeno[2,3-b]pyridin-5-yl)malononitrile,
- 15 2,4,7-triamino-5H-thiochromeno[2,3-b]pyridine-3-carbonitrile 10,10-dioxide,  
2,4-diamino-7-bromo-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2-amino-7,8-dimethoxy-4-(propylamino)-5H-chromeno[2,3-b]pyridine-3-carbonitrile,
- 20 2,4-diamino-7-hydroxy-5H-thiochromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-7-(dimethylamino)-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-7-methoxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2(2,4-diamino-3-cyano-9-methoxy-5H-chromeno[2,3-b]pyridin-5-yl)malononitrile,
- 25 2-amino-4-(benzylamino)-7,8-dimethoxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
8-(allyloxy)-2,4-diamino-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-9-fluoro-5H-thiochromeno[2,3-b]pyridine-3-carbonitrile,
- 30 2,4-diamino-7-methoxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-9-(2-pyrrolidin-1-ylethoxy)-5H-chromeno[2,3-b]pyridine-3-carbonitrile,

- 2,4-diamino-7-nitro-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-10-methyl-5,10-dihydrobenzo[b]-1,8-naphthyridine-3-  
carbonitrile,  
[(2,4-diamino-3-cyano-5H-chromeno[2,3-b]pyridin-9-yl)oxy]acetic acid,  
5 2-amino-4-[[2-(dimethylamino)ethyl]amino]-7,8-dimethoxy-5H-  
chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-7-nitro-5H-thiochromeno[2,3-b]pyridine-3-carbonitrile 10,10-  
dioxide,  
2,4-diamino-7-phenyl-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
10 2,4-diamino-7-chloro-9-methyl-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-7-fluoro-5H-thiochromeno[2,3-b]pyridine-3-carbonitrile 10,10-  
dioxide,  
8-ethoxy-2,4-bis(ethylamino)-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-5-(2-fluoro-phenyl)-8-methoxy-5H-chromeno[2,3-b]pyridine-3-  
15 carbonitrile,  
2,4-diamino-9-(2-hydroxyethoxy)-5H-chromeno[2,3-b]pyridine-3-  
carbonitrile,  
2,4-diamino-9-(2-aminoethoxy)-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2(2,4-diamino-3-cyano-7-chloro-5H-chromeno[2,3-b]pyridin-5-  
20 yl)malononitrile,  
2,4-bis[[2-(dimethylamino)ethyl]amino]-7,8-dimethoxy-5H-chromeno[2,3-  
b]pyridine-3-carbonitrile,  
2-amino-4-[[2-(1,3-dioxo-1,3-dihydro-2H-isoindol-2-yl)ethyl]amino]-7,8-  
dimethoxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
25 2,4-diamino-7-fluoro-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-7-bromo-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-9-(pyridin-4-ylmethoxy)-5H-chromeno[2,3-b]pyridine-3-  
carbonitrile,  
2,4-diamino-7-chloro-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
30 2,4-diamino-9-tert-butyl-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
ethyl 2,4-diamino-3-cyano-5H-chromeno[2,3-b]pyridine-9-carboxylate,

- 2,4-diamino-9-[2-(dimethylamino)ethoxy]-5H-chromeno[2,3-b]pyridine-3-carbonitrile,
- 2,4-bis(butylamino)-7,8-dimethoxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,
- 5 2-amino-4-(butylamino)-7,8-dimethoxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,
- 7,8-dimethoxy-2,4-bis(propylamino)-5H-chromeno[2,3-b]pyridine-3-carbonitrile,
- 2,4-bis(ethylamino)-7,8-dimethoxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,
- 10 2-amino-4-(ethylamino)-7,8-dimethoxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,
- 2,4-diamino-6,8-dimethoxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,
- 2,4-diamino-7-(trifluoromethoxy)-5H-chromeno[2,3-b]pyridine-3-carbonitrile,
- 15 2,4-diamino-7-bromo-9-methoxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,
- 2,4-diamino-9-methoxy-7-nitro-5H-chromeno[2,3-b]pyridine-3-carbonitrile,
- 7,9-diamino-10H-[1,3]dioxolo[6,7]chromeno[2,3-b]pyridine-8-carbonitrile,
- 20 7,9-diamino-10H-[1,3]dioxolo[6,7]chromeno[2,3-b]pyridine-8-carbonitrile,
- 2,4-diamino-8-methyl-5H-chromeno[2,3-b]pyridine-3-carbonitrile,
- 7,8-dimethoxy-2,4-bis[(2-methoxyethyl)amino]-5H-chromeno[2,3-b]pyridine-3-carbonitrile,
- 2-amino-7,8-dimethoxy-4-[(2-methoxyethyl)amino]-5H-chromeno[2,3-b]pyridine-3-carbonitrile,
- 25 2-amino-7,8-dimethoxy-4-[(2-pyrrolidin-1-ylethyl)amino]-5H-chromeno[2,3-b]pyridine-3-carbonitrile,
- 7,8-dimethoxy-2,4-bis[(2-pyrrolidin-1-ylethyl)amino]-5H-chromeno[2,3-b]pyridine-3-carbonitrile,
- 30 2,4-bis(glyciny)-7,8-dimethoxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,
- N*-(2-amino-3-cyano-7,8-dimethoxy-5H-chromeno[2,3-b]pyridin-4-yl)glycine,

- 2,4-diamino-3-cyano-5H-chromeno[2,3-b]pyridine-9-carboxylic acid,  
2,4-diamino-6-methoxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-9-bromo-7-chloro-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-bis(ethylamino)-7,8-dihydroxy-5H-chromeno[2,3-b]pyridine-3-  
5 carbonitrile,  
2,4-diamino-6-bromo-9-methoxy-5H-chromeno[2,3-b]pyridine-3-  
carbonitrile,  
2,4-diamino-8-hydroxy-7,9-bis(piperidin-1-ylmethyl)-5H-chromeno[2,3-  
b]pyridine-3-carbonitrile,  
10 2,4-diamino-5-phenyl-8-hydroxy-5H-chromeno[2,3-b]pyridine-3-  
carbonitrile,  
2,4-diamino-5-(3-fluoro-phenyl)-8-methoxy-5H-chromeno[2,3-b]pyridine-3-  
carbonitrile,  
2,4-diamino-9-hydroxy-6,8-bis(piperidin-1-ylmethyl)-5H-chromeno[2,3-  
15 b]pyridine-3-carbonitrile,  
2,4-diamino-7-bromo-8-methoxy-5H-chromeno[2,3-b]pyridine-3-  
carbonitrile,  
2,4-diamino-5-phenyl-8-methoxy-5H-chromeno[2,3-b]pyridine-3-  
carbonitrile,  
20 2,4-diamino-9-fluoro-5H-thiochromeno[2,3-b]pyridine-3-carbonitrile 10,10-  
dioxide,  
2,4-diamino-7-nitro-5H-thiochromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-7-methoxy-5H-thiochromeno[2,3-b]pyridine-3-carbonitrile  
10,10-dioxide,  
25 2,4-diamino-7-methoxy-5H-thiochromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-5H-thiochromeno[2,3-b]pyridine-3-carbonitrile 10,10-dioxide,  
2,4-diamino-5H-thiochromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-7-fluoro-5H-thiochromeno[2,3-b]pyridine-3-carbonitrile,  
2-amino-7,9-dimethyl-5-oxo-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
30 2-amino-7-isopropyl-5-oxo-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2-amino-7-ethyl-5-oxo-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2-amino-7-methyl-5-oxo-5H-chromeno[2,3-b]pyridine-3-carbonitrile,

2-amino-7-chloro-5-oxo-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2-amino-7-bromo-5-oxo-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2-amino-5-oxo-5H-chromeno[2,3-b]pyridine-3-carbonitrile, and  
3-amino-5H-pyrido[3,4-b][1,4]benzothiazine-4-carbonitrile.

5            9.        The aminocyanopyridine compound according to claim 8,  
wherein the compound is selected from the group consisting of:

2,4-diamino-7,8-dihydroxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-8-hydroxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2-amino-7,8-dihydroxy-4-[(2-hydroxyethyl)amino]-5H-chromeno[2,3-  
10        b]pyridine-3-carbonitrile,

2,4-diamino-7,8-dimethoxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2-amino-7,8-dihydroxy-4-(propylamino)-5H-chromeno[2,3-b]pyridine-3-  
carbonitrile,

2-amino-4-(ethylamino)-7,8-dihydroxy-5H-chromeno[2,3-b]pyridine-3-  
15        carbonitrile,

2,4-diamino-9-hydroxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-9-fluoro-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-7-hydroxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-8-(2-hydroxyethoxy)-5H-chromeno[2,3-b]pyridine-3-  
20        carbonitrile,

8,10-diamino-2,3-dihydro-11H-[1,4]dioxino[2',3':6,7]chromeno[2,3-  
b]pyridine-9-carbonitrile,

2,4,7-triamino-5H-chromeno[2,3-b]pyridine-3-carbonitrile

2,4-diamino-5H-chromeno[2,3-b]pyridine-3-carbonitrile,

2,4-diamino-8-(2-ethoxyethoxy)-7-hydroxy-5H-chromeno[2,3-b]pyridine-3-  
25        carbonitrile,

2,4-diamino-9-hydroxy-8-methoxy-5H-chromeno[2,3-b]pyridine-3-  
carbonitrile,

2,4-diamino-6,8-dihydroxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,

2,4-diamino-8-ethoxy-7-hydroxy-5H-chromeno[2,3-b]pyridine-3-  
30        carbonitrile,

2,4-diamino-8-(2-ethoxyethoxy)-5H-chromeno[2,3-b]pyridine-3-carbonitrile,

- 2,4-diamino-8-(2-aminoethoxy)-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-3-cyano-5H-chromeno[2,3-b]pyridine-7-carboxylic acid,  
2,4-diamino-8,9-dihydroxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-8-(2-morpholin-4-ylethoxy)-5H-chromeno[2,3-b]pyridine-3-  
5 carbonitrile, [(2,4-diamino-3-cyano-5H-chromeno[2,3-b]pyridin-8-  
yl)oxy]acetic acid,  
2,4-diamino-9-methoxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-8-(2-pyrrolidin-1-ylethoxy)-5H-chromeno[2,3-b]pyridine-3-  
carbonitrile,  
10 2-amino-7,8-dimethoxy-4-(methylamino)-5H-chromeno[2,3-b]pyridine-3-  
carbonitrile,  
2,4-diamino-8-methoxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-8-[2-(dimethylamino)ethoxy]-5H-chromeno[2,3-b]pyridine-3-  
carbonitrile,  
15 2,4,7-triamino-9-methoxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2(2,4-diamino-3-cyano-8-methoxy-5H-chromeno[2,3-b]pyridin-5-  
yl)malononitrile,  
2,4-diamino-7,8-di[2-(amino)ethoxy]-5H-chromeno[2,3-b]pyridine-3-  
carbonitrile,  
20 2,4-diamino-9-nitro-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2-amino-7,8-dimethoxy-4-[(4-methoxyphenyl)amino]-5H-chromeno[2,3-  
b]pyridine-3-carbonitrile,  
2,4-diamino-8-methoxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2(2,4-diamino-3-cyano-7-hydroxy-5H-chromeno[2,3-b]pyridin-5-  
25 yl)malononitrile,  
2(2,4-diamino-3-cyano-7-bromo-5H-chromeno[2,3-b]pyridin-5-  
yl)malononitrile,  
2-amino-8-ethoxy-4-(ethylamino)-5H-chromeno[2,3-b]pyridine-3-  
carbonitrile,  
30 2,4,9-triamino-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4,7-triamino-5H-thiochromeno[2,3-b]pyridine-3-carbonitrile,

- 2-amino-7,8-dimethoxy-4-[(4-methoxyphenyl)amino]-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2(2,4-diamino-3-cyano-7-methoxy-5H-chromeno[2,3-b]pyridin-5-yl)malononitrile,
- 5 2,4-diamino-9-hydroxy-8-(piperidin-1-ylmethyl)-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
7,8-bis(allyloxy)-2,4-diamino-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2-amino-8-(2-ethoxyethoxy)-4-[(2-ethoxyethyl)amino]-5H-chromeno[2,3-b]pyridine-3-carbonitrile,
- 10 tert-butyl {[2,4-diamino-7-(2-tert-butoxy-2-oxoethoxy)-3-cyano-5H-chromeno[2,3-b]pyridin-8-yl]oxy}acetate,  
2-amino-4-[(2-aminoethyl)amino]-7,8-dimethoxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2(2,4-diamino-3-cyano-8-hydroxy-5H-chromeno[2,3-b]pyridin-5-yl)malononitrile,
- 15 2,4,7-triamino-5H-thiochromeno[2,3-b]pyridine-3-carbonitrile 10,10-dioxide,  
2,4-diamino-7-bromo-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2-amino-7,8-dimethoxy-4-(propylamino)-5H-chromeno[2,3-b]pyridine-3-carbonitrile,
- 20 2,4-diamino-7-hydroxy-5H-thiochromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-7-(dimethylamino)-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-7-methoxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2(2,4-diamino-3-cyano-9-methoxy-5H-chromeno[2,3-b]pyridin-5-yl)malononitrile,
- 25 2-amino-4-(benzylamino)-7,8-dimethoxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
8-(allyloxy)-2,4-diamino-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-9-fluoro-5H-thiochromeno[2,3-b]pyridine-3-carbonitrile,
- 30 2,4-diamino-7-methoxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-9-(2-pyrrolidin-1-ylethoxy)-5H-chromeno[2,3-b]pyridine-3-carbonitrile,



2,4-diamino-7-nitro-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-10-methyl-5,10-dihydrobenzo[b]-1,8-naphthyridine-3-  
carbonitrile,  
[(2,4-diamino-3-cyano-5H-chromeno[2,3-b]pyridin-9-yl)oxy]acetic acid,  
5 2-amino-4-[[2-(dimethylamino)ethyl]amino]-7,8-dimethoxy-5H-  
chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-7-nitro-5H-thiochromeno[2,3-b]pyridine-3-carbonitrile 10,10-  
dioxide,  
2,4-diamino-7-phenyl-5H-chromeno[2,3-b]pyridine-3-carbonitrile, and  
10 prodrugs, salts, tautomers, and combinations thereof.

10. The aminocyanopyridine compound according to claim 8,  
wherein the compound is selected from the group consisting of:

2,4-diamino-7,8-dihydroxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-8-hydroxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
15 2-amino-7,8-dihydroxy-4-[(2-hydroxyethyl)amino]-5H-chromeno[2,3-  
b]pyridine-3-carbonitrile,  
2,4-diamino-7,8-dimethoxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2-amino-7,8-dihydroxy-4-(propylamino)-5H-chromeno[2,3-b]pyridine-3-  
carbonitrile,  
20 2-amino-4-(ethylamino)-7,8-dihydroxy-5H-chromeno[2,3-b]pyridine-3-  
carbonitrile,  
2,4-diamino-9-hydroxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-9-fluoro-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-7-hydroxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
25 2,4-diamino-8-(2-hydroxyethoxy)-5H-chromeno[2,3-b]pyridine-3-  
carbonitrile,  
8,10-diamino-2,3-dihydro-11H-[1,4]dioxino[2',3':6,7]chromeno[2,3-  
b]pyridine-9-carbonitrile,  
2,4,7-triamino-5H-chromeno[2,3-b]pyridine-3-carbonitrile  
30 2,4-diamino-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-8-(2-ethoxyethoxy)-7-hydroxy-5H-chromeno[2,3-b]pyridine-3-  
carbonitrile,

- 2,4-diamino-9-hydroxy-8-methoxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-6,8-dihydroxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-8-ethoxy-7-hydroxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
5 2,4-diamino-8-(2-ethoxyethoxy)-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-8-(2-aminoethoxy)-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-3-cyano-5H-chromeno[2,3-b]pyridine-7-carboxylic acid,  
2,4-diamino-8,9-dihydroxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
10 2,4-diamino-8-(2-morpholin-4-ylethoxy)-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
[(2,4-diamino-3-cyano-5H-chromeno[2,3-b]pyridin-8-yl)oxy]acetic acid,  
2,4-diamino-9-methoxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-8-(2-pyrrolidin-1-ylethoxy)-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
15 2-amino-7,8-dimethoxy-4-(methylamino)-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-8-methoxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-8-[2-(dimethylamino)ethoxy]-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
20 2,4,7-triamino-9-methoxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2(2,4-diamino-3-cyano-8-methoxy-5H-chromeno[2,3-b]pyridin-5-yl)malononitrile,  
2,4-diamino-7,8-di[2-(amino)ethoxy]-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
25 2,4-diamino-9-nitro-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2-amino-7,8-dimethoxy-4-[(4-methoxyphenyl)amino]-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-8-methoxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
30 2(2,4-diamino-3-cyano-7-hydroxy-5H-chromeno[2,3-b]pyridin-5-yl)malononitrile,

2(2,4-diamino-3-cyano-7-bromo-5H-chromeno[2,3-b]pyridin-5-yl)malononitrile,

2-amino-8-ethoxy-4-(ethylamino)-5H-chromeno[2,3-b]pyridine-3-carbonitrile,

5 2,4,9-triamino-5H-chromeno[2,3-b]pyridine-3-carbonitrile,

2,4,7-triamino-5H-thiochromeno[2,3-b]pyridine-3-carbonitrile,

2-amino-7,8-dimethoxy-4-[(4-methoxyphenyl)amino]-5H-chromeno[2,3-b]pyridine-3-carbonitrile,

10 2(2,4-diamino-3-cyano-7-methoxy-5H-chromeno[2,3-b]pyridin-5-yl)malononitrile,

2,4-diamino-9-hydroxy-8-(piperidin-1-ylmethyl)-5H-chromeno[2,3-b]pyridine-3-carbonitrile,

7,8-bis(allyloxy)-2,4-diamino-5H-chromeno[2,3-b]pyridine-3-carbonitrile,

15 2-amino-8-(2-ethoxyethoxy)-4-[(2-ethoxyethyl)amino]-5H-chromeno[2,3-b]pyridine-3-carbonitrile, and  
prodrugs, salts, tautomers, and combinations thereof.

11. The aminocyanopyridine compound according to claim 8, wherein the compound is selected from the group consisting of:

2,4-diamino-7,8-dihydroxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,

20 2,4-diamino-8-hydroxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,

2-amino-7,8-dihydroxy-4-[(2-hydroxyethyl)amino]-5H-chromeno[2,3-b]pyridine-3-carbonitrile,

2,4-diamino-7,8-dimethoxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,

25 2-amino-7,8-dihydroxy-4-(propylamino)-5H-chromeno[2,3-b]pyridine-3-carbonitrile,

2-amino-4-(ethylamino)-7,8-dihydroxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,

2,4-diamino-9-hydroxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,

2,4-diamino-9-fluoro-5H-chromeno[2,3-b]pyridine-3-carbonitrile,

30 2,4-diamino-7-hydroxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,

2,4-diamino-8-(2-hydroxyethoxy)-5H-chromeno[2,3-b]pyridine-3-carbonitrile,

- 8,10-diamino-2,3-dihydro-1H-[1,4]dioxino[2',3':6,7]chromeno[2,3-b]pyridine-9-carbonitrile,  
2,4,7-triamino-5H-chromeno[2,3-b]pyridine-3-carbonitrile  
2,4-diamino-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
5 2,4-diamino-8-(2-ethoxyethoxy)-7-hydroxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-9-hydroxy-8-methoxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-6,8-dihydroxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
10 2,4-diamino-8-ethoxy-7-hydroxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-8-(2-ethoxyethoxy)-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-8-(2-aminoethoxy)-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-3-cyano-5H-chromeno[2,3-b]pyridine-7-carboxylic acid,  
15 2,4-diamino-8,9-dihydroxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-8-(2-morpholin-4-ylethoxy)-5H-chromeno[2,3-b]pyridine-3-carbonitrile, [(2,4-diamino-3-cyano-5H-chromeno[2,3-b]pyridin-8-yl)oxy]acetic acid,  
2,4-diamino-9-methoxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
20 2,4-diamino-8-(2-pyrrolidin-1-ylethoxy)-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2-amino-7,8-dimethoxy-4-(methylamino)-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4-diamino-8-methoxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
25 2,4-diamino-8-[2-(dimethylamino)ethoxy]-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2,4,7-triamino-9-methoxy-5H-chromeno[2,3-b]pyridine-3-carbonitrile,  
2(2,4-diamino-3-cyano-8-methoxy-5H-chromeno[2,3-b]pyridin-5-yl)malononitrile, and  
30 prodrugs, salts, tautomers, and combinations thereof.

12. The aminocyanopyridine compound according to claim 1, wherein the compound is capable of inhibiting the activity of MK-2.

13. The aminocyanopyridine compound according to claim 1,  
wherein the compound provides an  $IC_{50}$  value of below 100  $\mu M$  in an MK-2  
activity inhibition assay.

5 14. The aminocyanopyridine compound according to claim 1,  
wherein the compound provides an MK-2  $IC_{50}$  value of below 1  $\mu M$  in an  
MK-2 activity inhibition assay.

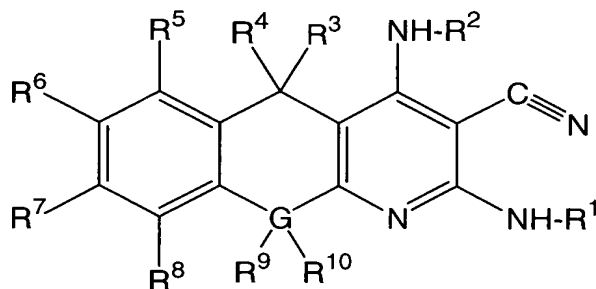
15. The aminocyanopyridine compound according to claim 1,  
wherein the compound provides a  $TNF\alpha$  release  $IC_{50}$  value of below 200  
 $\mu M$  in an *in vitro* cell assay.

10 16. The aminocyanopyridine compound according to claim 1,  
wherein the compound provides a  $TNF\alpha$  release  $IC_{50}$  values of below 1  $\mu M$   
in an *in vitro* cell assay.

17. The aminocyanopyridine compound according to claim 1,  
wherein the compound provides a degree of inhibition of  $TNF\alpha$  in a rat  
15 LPS assay of at least about 25%.

18. The aminocyanopyridine compound according to claim 1,  
wherein the aminocyanopyridine MK-2 inhibiting compound provides a  
degree of inhibition of  $TNF\alpha$  in a rat LPS assay of above 80%.

20 19. A pharmaceutical composition comprising a pharmaceutically  
acceptable carrier and an aminocyanopyridine MK-2 inhibiting compound  
having the structure:



wherein:

25 each of R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup>, and R<sup>8</sup> is independently selected  
from the group consisting of

hydrogen, hydroxy, amino, halo, nitro,

branched or unbranched C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, C<sub>2</sub>-C<sub>6</sub> alkynyl, C<sub>1</sub>-C<sub>6</sub> alkoxy, hydroxy C<sub>1</sub>-C<sub>6</sub> alkyl, hydroxy C<sub>1</sub>-C<sub>6</sub> alkoxy, C<sub>1</sub>-C<sub>6</sub> alkoxy C<sub>1</sub>-C<sub>6</sub> alkoxy, C<sub>1</sub>-C<sub>6</sub> alkoxy C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>1</sub>-C<sub>6</sub> alkenoxy,

5 branched or unbranched amino C<sub>1</sub>-C<sub>6</sub> alkyl, diamino C<sub>2</sub>-C<sub>6</sub> alkyl, C<sub>1</sub>-C<sub>6</sub> alkylamino C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>1</sub>-C<sub>6</sub> alkylamino, di-(C<sub>1</sub>-C<sub>6</sub> alkyl)amino, C<sub>1</sub>-C<sub>4</sub> alkoxyarylamino, C<sub>1</sub>-C<sub>4</sub> alkoxyalkylamino, amino C<sub>1</sub>-C<sub>6</sub> alkoxy, di-(C<sub>1</sub>-C<sub>4</sub> alkylamino, C<sub>2</sub>-C<sub>6</sub> alkoxy, di-(C<sub>1</sub>-C<sub>6</sub> alkyl)amino C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>1</sub>-C<sub>6</sub>

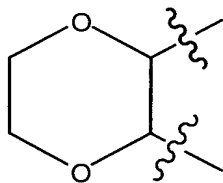
10 alkylamino C<sub>1</sub>-C<sub>6</sub> alkoxy, halo C<sub>1</sub>-C<sub>6</sub> alkoxy, dihalo C<sub>1</sub>-C<sub>6</sub> alkoxy, trihalo C<sub>1</sub>-C<sub>6</sub> alkoxy, cyano C<sub>1</sub>-C<sub>6</sub> alkyl, dicyano C<sub>1</sub>-C<sub>6</sub> alkyl, cyano C<sub>1</sub>-C<sub>6</sub> alkoxy, dicyano C<sub>1</sub>-C<sub>6</sub> alkoxy, carbamyl C<sub>1</sub>-C<sub>4</sub> alkoxy, heterocyclyl C<sub>1</sub>-C<sub>4</sub> alkoxy, heteroaryl C<sub>1</sub>-C<sub>4</sub> alkoxy, sulfo, sulfamyl, C<sub>1</sub>-C<sub>4</sub> alkylaminosulfonyl, hydroxy C<sub>1</sub>-C<sub>4</sub> alkylaminosulfonyl, di-(C<sub>1</sub>-C<sub>4</sub> alkyl)aminosulfonyl, C<sub>1</sub>-C<sub>4</sub> alkylthio, C<sub>1</sub>-C<sub>4</sub> alkylsulfonyl, C<sub>1</sub>-C<sub>4</sub> alkylsulfinyl,

15 aryl, aryl C<sub>1</sub>-C<sub>6</sub> alkyl, heterocyclyl C<sub>1</sub>-C<sub>6</sub> alkyl, heteroaryl C<sub>1</sub>-C<sub>6</sub> alkyl, heterocyclyl C<sub>1</sub>-C<sub>6</sub> alkoxy, heteroaryl C<sub>1</sub>-C<sub>6</sub> alkoxy, aryl C<sub>1</sub>-C<sub>6</sub> alkoxy, where the aryl ring can be substituted or unsubstituted, and, if substituted, the substituent group is selected from one or more of the group consisting of C<sub>1</sub>-C<sub>6</sub> alkyl, halo, amino, and C<sub>1</sub>-C<sub>6</sub> alkoxy,

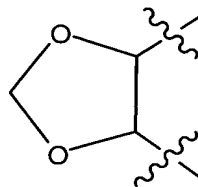
20 substituted or unsubstituted C<sub>3</sub>-C<sub>6</sub> cyclyl, C<sub>3</sub>-C<sub>6</sub> heterocyclyl, and, if substituted, the substituent group is selected from one or more of the group consisting of C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>1</sub>-C<sub>6</sub> alkoxy, halo, amino, and where the C<sub>3</sub>-C<sub>6</sub> heterocyclyl ring contains O, S, or N,

25 branched or unbranched C<sub>1</sub>-C<sub>6</sub> alkoxycarbonyl C<sub>1</sub>-C<sub>6</sub> alkoxy, and carboxy, carboxy C<sub>1</sub>-C<sub>6</sub> alkoxy, carboxy C<sub>1</sub>-C<sub>6</sub> alkyl, hydroxy C<sub>1</sub>-C<sub>4</sub> alkoxycarbonyl, C<sub>1</sub>-C<sub>4</sub> alkoxycarbonyl,

where R<sup>6</sup> and R<sup>7</sup> are such that they optionally join to form a ring system of the type selected from



, and



;

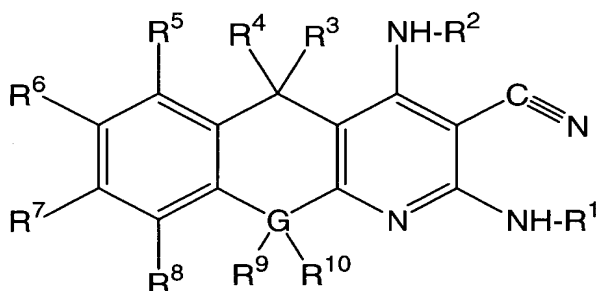
G is selected from the group consisting of oxygen, sulfur, and nitrogen;

when G is oxygen, R<sup>9</sup> and R<sup>10</sup> are absent;

5 when G is sulfur, each of R<sup>9</sup> and R<sup>10</sup> is optionally absent, or is oxo;

when G is nitrogen, R<sup>9</sup> is absent, and R<sup>10</sup> is C<sub>1</sub>-C<sub>4</sub>-alkyl.

20. A kit comprising a dosage form containing an aminocyanopyridine MK-2 inhibiting compound having the structure:



10 wherein:

each of R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup>, and R<sup>8</sup> is independently selected from the group consisting of

hydrogen, hydroxy, amino, halo, nitro,

15 branched or unbranched C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, C<sub>2</sub>-C<sub>6</sub> alkynyl, C<sub>1</sub>-C<sub>6</sub> alkoxy, hydroxy C<sub>1</sub>-C<sub>6</sub> alkyl, hydroxy C<sub>1</sub>-C<sub>6</sub> alkoxy, C<sub>1</sub>-C<sub>6</sub> alkoxy C<sub>1</sub>-C<sub>6</sub> alkoxy, C<sub>1</sub>-C<sub>6</sub> alkoxy C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>1</sub>-C<sub>6</sub> alkenoxy,

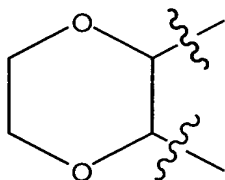
20 branched or unbranched amino C<sub>1</sub>-C<sub>6</sub> alkyl, diamino C<sub>2</sub>-C<sub>6</sub> alkyl, C<sub>1</sub>-C<sub>6</sub> alkylamino C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>1</sub>-C<sub>6</sub> alkylamino, di-(C<sub>1</sub>-C<sub>6</sub> alkyl)amino, C<sub>1</sub>-C<sub>4</sub> alkoxyarylamino, C<sub>1</sub>-C<sub>4</sub> alkoxyalkylamino, amino C<sub>1</sub>-C<sub>6</sub> alkoxy, di-(C<sub>1</sub>-C<sub>4</sub> alkylamino, C<sub>2</sub>-C<sub>6</sub> alkoxy, di-(C<sub>1</sub>-C<sub>6</sub> alkyl)amino C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>1</sub>-C<sub>6</sub> alkylamino C<sub>1</sub>-C<sub>6</sub> alkoxy, halo C<sub>1</sub>-C<sub>6</sub> alkoxy, dihalo C<sub>1</sub>-C<sub>6</sub> alkoxy, trihalo C<sub>1</sub>-C<sub>6</sub> alkoxy, cyano C<sub>1</sub>-C<sub>6</sub> alkyl, dicyano C<sub>1</sub>-C<sub>6</sub> alkyl, cyano C<sub>1</sub>-C<sub>6</sub> alkoxy, dicyano C<sub>1</sub>-C<sub>6</sub> alkoxy, carbamyl C<sub>1</sub>-C<sub>4</sub> alkoxy, heterocyclyl C<sub>1</sub>-C<sub>4</sub> alkoxy, heteroaryl C<sub>1</sub>-C<sub>4</sub> alkoxy, sulfo, sulfamyl, C<sub>1</sub>-C<sub>4</sub> alkylaminosulfonyl, hydroxy C<sub>1</sub>-C<sub>4</sub> alkylaminosulfonyl, di-(C<sub>1</sub>-C<sub>4</sub> alkyl)aminosulfonyl, C<sub>1</sub>-C<sub>4</sub> alkylthio, C<sub>1</sub>-C<sub>4</sub> alkylsulfonyl, C<sub>1</sub>-C<sub>4</sub> alkylsulfinyl,

aryl, aryl C<sub>1</sub>-C<sub>6</sub> alkyl, heterocyclyl C<sub>1</sub>-C<sub>6</sub> alkyl, heteroaryl C<sub>1</sub>-C<sub>6</sub> alkyl,  
heterocyclyl C<sub>1</sub>-C<sub>6</sub> alkoxy, heteroaryl C<sub>1</sub>-C<sub>6</sub> alkoxy, aryl C<sub>1</sub>-C<sub>6</sub> alkoxy,  
where the aryl ring can be substituted or unsubstituted, and, if substituted,  
the substituent group is selected from one or more of the group consisting  
5 of C<sub>1</sub>-C<sub>6</sub> alkyl, halo, amino, and C<sub>1</sub>-C<sub>6</sub> alkoxy,

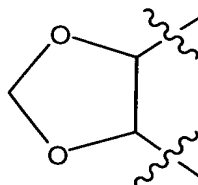
substituted or unsubstituted C<sub>3</sub>-C<sub>6</sub> cyclyl, C<sub>3</sub>-C<sub>6</sub> heterocyclyl, and, if  
substituted, the substituent group is selected from one or more of the  
group consisting of C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>1</sub>-C<sub>6</sub> alkoxy, halo, amino, and where the  
C<sub>3</sub>-C<sub>6</sub> heterocyclyl ring contains O, S, or N,

10 branched or unbranched C<sub>1</sub>-C<sub>6</sub> alkoxycarbonyl C<sub>1</sub>-C<sub>6</sub> alkoxy, and  
carboxy, carboxy C<sub>1</sub>-C<sub>6</sub> alkoxy, carboxy C<sub>1</sub>-C<sub>6</sub> alkyl, hydroxy C<sub>1</sub>-C<sub>4</sub>  
alkoxycarbonyl, C<sub>1</sub>-C<sub>4</sub> alkoxycarbonyl,

where R<sup>6</sup> and R<sup>7</sup> are such that they optionally join to form a ring  
system of the type selected from



, and



;

15 G is selected from the group consisting of oxygen, sulfur, and  
nitrogen;

when G is oxygen, R<sup>9</sup> and R<sup>10</sup> are absent;

when G is sulfur, each of R<sup>9</sup> and R<sup>10</sup> is optionally absent, or is oxo;

20 when G is nitrogen, R<sup>9</sup> is absent, and R<sup>10</sup> is C<sub>1</sub>-C<sub>4</sub>-alkyl.